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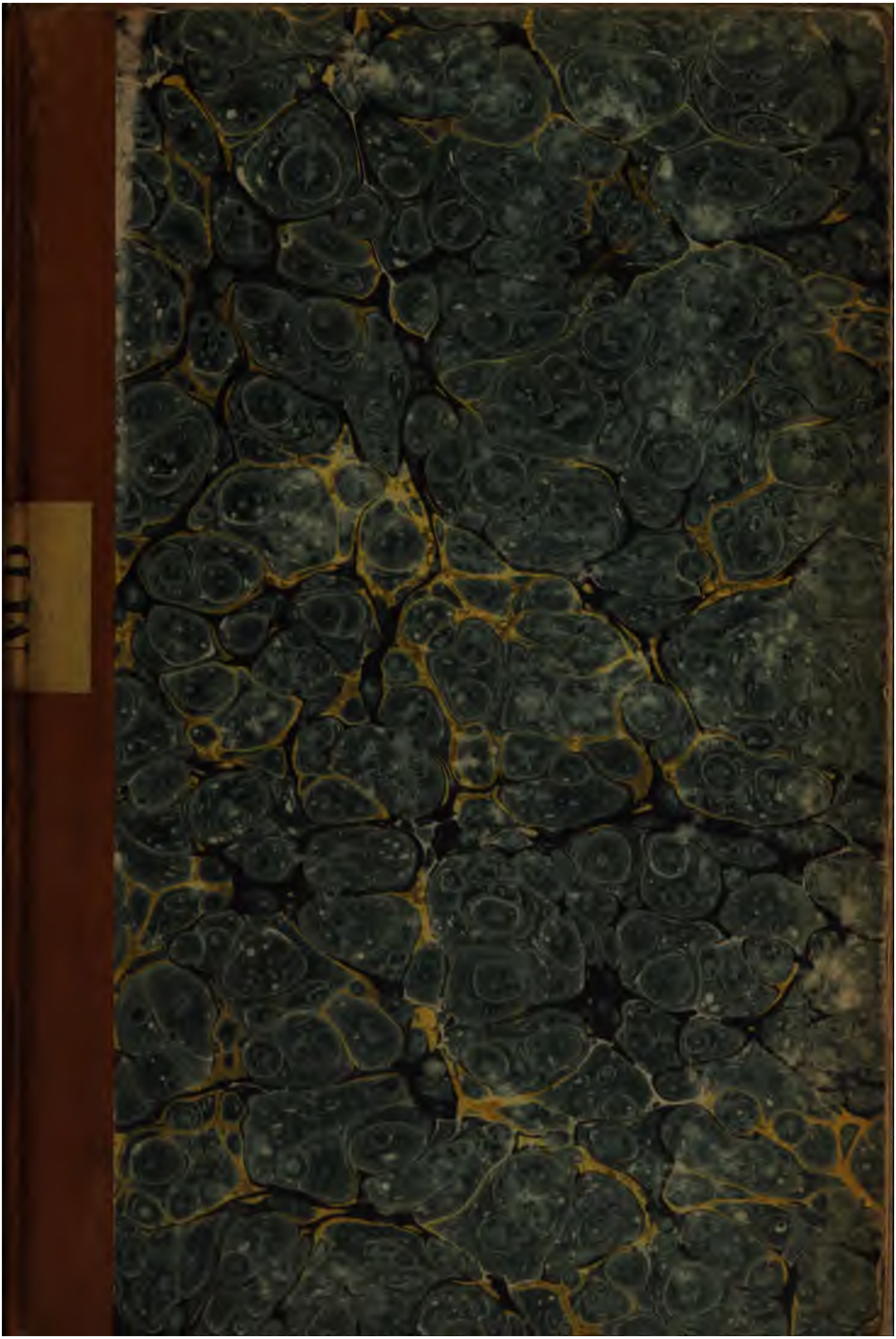

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THE NECESSITY
OF
BROWN BREAD
FOR
DIGESTION, NOURISHMENT,
AND
SOUND HEALTH;
AND THE INJURIOUS EFFECTS
OF
WHITE BREAD.

BY DANIEL CARR, M.D.

LONDON:
EFFINGHAM WILSON, 11, ROYAL EXCHANGE
And may be had by Order of all Booksellers,
also of the Author.
1847.

Price Threepence.

BIBLIOTHECA · BODLEIANA ·

PREFACE.

THE following Pamphlet had its origin in a desire on the part of the Writer to undeceive the people of England with regard to an almost general opinion that the finest flour conveys the most nutriment to the system. He has endeavoured to show that this is an error productive of great injury to their health; and if he succeeds in bringing about a change, his trifling labour will be rewarded with the most solid gratification.

To those who undergo great corporeal exertions, in any occupation of life, whether in the workshop or the open air, brown bread offers the best means of recruiting their wasted energies, by giving them a sound substantial food to supply the wants of the frame. From its tendency, likewise, to promote regularity of the digestive organs, and thence clearness of the intellectual perceptions, it will enable the studious and the sedentary to pursue their avocations with greater ease and success, without that stimulus which is so often sought for in alcoholic liquors. In short, the benefits that would accrue to each individual in his own person, and to society in the mass, by the adoption of this excellent article of diet, are of the highest importance, and deserve universal consideration.

33, GREAT CHARLES ST.,
BIRMINGHAM,
SEPTEMBER, 1847,

Works published by the same Author.

CONSUMPTION OF THE LUNGS AND ASTHMA ARRESTED AND CURED, in the majority of cases, by INHALATION, and other rational means; containing all the remedies and plans that are necessary in every stage of those diseases. Also, the means of curing Influenza, Cough, Bronchitis, Sore-throat, Hoarseness, Inflammation of the Lungs, &c. Price 3s.6d.

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For an account of Inhalation see the cover of this Pamphlet at the end.

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BROWN BREAD.

The causes which contribute to engender disease in a civilized state of society are numerous. First and principally comes, without doubt, the extensive use of alcoholic liquors, which predispose the system for the reception of every kind of disease ; then we have inattention to cleanliness, want of ventilation, the injurious effects of certain trades, exposure to cold and damp, keeping late hours, &c. ; but it is also an ascertained fact that very much of the ill health and debility under which the inhabitants of this country suffer, arises from the constant use of bread made of superfine flour. This article is extremely prejudicial, and is daily undermining the health of thousands upon thousands, and until a general change is effected in this respect, we shall see mankind weak, devoid of corporeal vigour, and dragging on a listless and feeble existence.

This constant use of superfine flour gives rise to costiveness in its most obstinate forms, and with this spring up the innumerable diseases with which poor human nature is afflicted. People then have recourse to a host of Aperient Pills or Mixtures, hoping thereby to obtain relief. Thus they go on from week to week, and from month to month, eating the white bread and irritating the bowels with improper physic till they bring on organic disease and sink into the grave long before their natural term of life is expired. By separating the flour from the bran its properties become too *concentrated*, and it has been proved by conclusive experiments that *man cannot long subsist on highly concentrated food :* neither the stomach nor the bowels are adapted in structure for it. The bran, or coarse part of the grain, is therefore required to adapt the bread to the peculiar wants of the system ; it is designed by nature to keep up a continued action and stimulus to the bowels, for the purpose of preventing costiveness, and a deranged state of the stomach and intestines.

It is clear then that the coarser parts of the wheat when ground should never be separated from the fine, at least only the very coarsest parts; but both should be allowed to remain together, then made into bread in the ordinary manner. From this preparation there will be a large residue left to be thrown out of the system, and this residue forms the natural stimulus of the bowels, and, consequently exites them to purer action. This kind of bread, denominated brown or meal bread, although it is not so white as that made of superfine flour, is more palatable, much lighter, more easily digested, regulates the bowels with admirable effect, and if habitually employed, together with other precautions, would render medicine comparatively useless for the cure of almost every symptom connected with indigestion. I scarcely ever knew a single case, in which attention was paid to this particular, that did not receive radical benefit and regain a proper tone of the stomach and alimentary canal.—It never fails with my patients who adopt it.

As corroborative of my views and practice on this head I will here present the reader with some curious but important statements. Near the close of the last century, owing to a scarcity of provisions, eighty thousand English soldiers were fed on meal bread, and such were its effects, that the officers and physicians of the army declared the soldiers were never before so healthy and robust—and that disease of every kind had almost disappeared from among them.

Now this is proving the matter at once in a wholesale way, nor are other examples wanting, equally satisfactory. The following is one: Captain Dexter of the ship Isis, belonging to Providence, in America, arrived from China in December 1804. He had been about 190 days on the passage. The sea-bread, which constituted the principal article of food for his men, was made of the best superfine flour. He had not been long at sea before his men began to complain of languor, loss of appetite, and debility. These difficulties continued to increase during the whole voyage; and several of the hands died on the passage of debility and inanition. The ship was obliged to come to an anchor about thirty miles below Providence; and such was the debility of the men on board, that they were not able to get the ship under weigh again, and the owners, were under the necessity of sending men down from

Providence to work her up. When she arrived, the owners asked Captain Dexter what was the cause of the sickness of the men. He replied, "The bread was too good."

The inhabitants of Westphalia, says a writer in Rees' Cyclopedia, are a living testimony to the salutary effects of this sort of bread—and it is remarkable that they are very seldom attacked by acute fevers, and those other diseases which arise from bad humours.

Magendie tried the experiment of feeding dogs upon white bread and water, but all the animals died within fifty days, whilst those to which he had given household bread, which only differed from the white bread by retaining a quantity of the bran, continued to thrive upon it very well. It is remarkable, that one of the dogs which died, had been put upon his usual diet between the fortieth and forty-fifth days, but nothing could save him from the fatal effects of the white bread. Do we need any other proof than this of the injurious effects of common bread?

No very concentrated food can be used long with advantage. Magendie likewise ascertained that animals fed exclusively on butter, or fat, presented a *fatty* state of the liver after death. He also fed dogs on sugar and water, and found that they soon drooped, became emaciated, diseased with ulcers, and usually died in about a month.

Children, whose food consists for a considerable time of *superfine flour* bread, and other concentrated substances, as sugar and butter, generally become weak and sickly, and are often covered with sores—but by putting them on a diet of good meal bread, with milk and water, or pure soft water for drink, allowing them also to indulge freely in the use of good fruits in their season, none of the evils which result from concentrated forms of aliment will be experienced, and if properly treated in other respects, they will be perfectly healthy, robust, and sprightly.

No one has set the matter in a stronger light than Professor Johnston, or explained the subject in a more scientific manner. His observations are too valuable to be omitted, for they shew us at once the plain reason for the effects that are produced by the two modes of diet. He remarks that—"The grain of wheat consists of two parts, with which the miller is familiar —the inner grain and the skin that covers it. The inner grain gives the pure wheat flour; the skin when separated, forms the bran. The miller cannot entirely peel off the skin from his grain, and thus some of it is unavoidably ground up with his flour, By sifting he separates it more or less completely; his seconds, middlings, &c., owing their colour to the proportion of brown bran that has passed through the sieve along with the flour. The whole meal, as it is called, of which the so-named brown household bread is made, consists of the entire grain ground up together—used as it comes from the millstones unsifted, and therefore containing all the bran. The first white flour, therefore, may be said to contain no bran, while the whole meal contains all that grew naturally upon the grain.

"The solid parts of the human body consist, principally, of three several portions: the fat, the muscle, and the bone. These three substances are liable to constant waste in the living body, and therefore must be constantly renewed from the food that we eat. The vegetable food we consume contains these three substances almost ready formed.

"Again, the fluid parts of the body contain the same substances in a liquid form, on their way to or from the several parts of the body in which they are required. They include also a portion of salt or saline matter which is dissolved in them, as we dissolve common salt in our soup, or Epsom salts in the pleasant draughts with which our doctors delight to vex us. This saline matter is also obtained from the food.

"Now, it is self-evident, that that food must be the most nourishing which supplies all these ingredients of the body most abundantly on the whole, or in proportions most suited to the actual wants of the individual animal to which it is given.

"How stands the question, then, in regard to this point between the brown bread and the white—the fine flour, and the whole meal of wheat?

"What is the composition of these two portions of the wheat? How much do they respectively contain of the several constituents of the animal body? How much of each is contained also in the whole grain?

"1. *The fat.*—Of this ingredient a thousand pounds of the

Whole grain	contain	28	lbs.
Fine Flour	,,	20	,,
Bran	,,	60	,,

So that the bran is much richer in fat than the interior part of the grain, and the whole grain ground together (whole meal) richer than the finer part of the flour in the proportion of nearly one half.

"2. *The muscular matter.*—Numerous experiments have been made to determine these proportions in the fine flour and whole seed of several varieties of grain. The general result of these is, that the whole grain uniformly contains a larger quantity, weight for weight, than the fine flour extracted from it does. The particular results in the case of wheat and Indian corn were as follows :—A thousand pounds of the whole grain and of the fine flour contained of muscular matter, respectively—

	Whole grain	Fine Flour
Wheat	156 lbs.	130 lbs.
Indian Corn	140	110

Of the material out of which the animal muscle is to be formed, the whole meal or grain of wheat contains one fifth more than the finest flour does, For maintaining muscular strength, therefore, it must be more valuable in an equal proportion.

" 3. *Bone material and Saline matter.*—Of these mineral constituents, as they may be called, of the animal body, a thousand pounds of bran, whole meal, and fine flour, contain respectively—

Bran	700 lbs.
Whole meal	170 ,,
Fine Flour	60 ,,

" So that in regard to this important part of our food, necessary to all living animals, but especially to the young who are growing, and to the mother who is giving milk—the whole meal is three times more nourishing than the fine flour."

Here is a statement based upon careful experiment and correct analysis, shewing that by separating the bran of wheat from the flour we reject that very constituent which is absolutely necessary, as a *medium* for conveying nutriment to the body. Thus we do not properly supply the waste which the system undergoes, and debility, languor, and departure from health are the inevitable consequences.

The reader is now requested to consider attentively the preceding statements, and he will find that a thousand pounds of the whole meal and fine flour respectively contain the following proportions of the principal substances composing the human body :

	Fat.	Muscular matter.	Bone material.		Total in each.
Whole meal,	28 lbs.	156 lbs.	170 lbs.	—	354 lbs.
Fine flour,	20 ,,	130 ,,	60 ,,		210 ,,

Thus we see that the total of the whole meal is 354 lbs., whereas that of the fine flour is only 210 lbs., the former exceeding the latter by more than one-half:—in the same proportion therefore will the whole meal be superior to the fine flour, in fulfilling all the purposes of nutrition, and repairing the waste that is constantly taking place in the human body.

" It will not be denied," says the Professor, " that it is for a wise purpose that the Deity has so intimately associated, in the grain, the several substances which are necessary for the complete nutrition of animal bodies. The above considerations show how *unwise* we are in attempting to undo this *natural collocation* of materials. To please the eye and the palate, we sift out a less generally nutritive food,—and, to make up for what we have removed, experience teaches us to have recourse to animal food of various descriptions.

" It is interesting to remark, even in apparently trivial things, how all nature is full of compensating processes. We give our servants household bread, while we live on the finest of the wheat ourselves. The mistress eats that which pleases the eye more, the maid what sustains and nourishes the body better. 'But the whole meal is more wholesome as well as more nutritive. It is on account of its superior wholesomeness that those who are experienced in medicine usually recommend it to our attention. Experience in the laws of digestion brings us back to the simple admixture found in the natural seed. It is not an accidental thing that the proportions in which the ingredients of a truly sustaining food take their places in the seeds on which we live, should be best fitted at once to promote the health of the sedentary scholar, and to reinvigorate the strength of the active man when exhausted by bodily labour."

It will doubtless be objected that as the bran *alone* is found on analysis to be much richer in those ingredients which are to be supplied to the human body, than either the whole grain or the fine flour, we ought to use nothing else but bran, and not adulterate it, as it were, by mixing it in any proportion with the finer part. This objection the Professor very properly meets by stating (what is proved by facts and trials) that the mixture of the two in reality increases the virtues of both—the nutritive effect of the fine flour is increased when mixed with the bran, and becomes greater than can be derived from the constituents of the bran taken alone. Thus, the union of the two, as they exist in their natural state, will go farther as food than either taken separately. " Again, if eaten alone, bran would prove too difficult, and therefore slow of digestion in most human stomachs," (although it produces the best effects on other animals whose stomachs are constituted diffierently.) "Much would thus pass, unexhausted of its nutritive matter, through the alimentary canal, as whole oats often do through that of horses, and thus a considerable waste would ensue.

"And further, supposing all to be dissolved in the stomach, there would still, of necessity, be a waste of material, since the bran actually contains a larger proportion of bone material and saline matter compared with its other ingredients, than the body, in its natural healthy state, can make use of. All this excess must, therefore, be rejected by the body, and, as nutritive matter, for the time be wasted.

"Lastly, it is doubtful if bran alone contains enough of starch, or of any substitute for it, to meet the other demands of the human system. Both whole meal and fine flour contain a sufficient quantity of the starch of the grain to supply the wants of the living animal, but with the bran the case is different. It is doubtful if the purposes of the starch could be fully, and with sufficient speed, fulfilled by the ingredients which, in the bran, take the place of starch in the flour. The cellular fibre or woody matter, of which it contains a considerable proportion, is too slowly soluble in the stomachs of ordinary men. While, therefore, much of it would pass through the body undigested, it would require to be eaten in far larger proportions than its composition indicates, if the body was to be supported, and thus a further waste would be incurred."

After proving by other calculations also the *economy* which would arise to the nation from not separating the two parts of the grain, the Professor beautifully observes: "On the whole, therefore, we come back to the whole meal, as the most economical as well as the most nutritive and wholesome form in which the grain of wheat can be consumed. The Deity has done far better for us, by the natural mixtures to be found in the whole seed, than we can do for ourselves. The materials both in form and in proportion are adjusted in such seed, as wheat, in a way more suitable to us than any which, with our present knowledge, we appear able to devise."

Now this fact reads to us an admirable lesson—it shews how powerless are our attempts to improve upon the appointments of our universal Parent—it proves that those appointments, when scanned with the eye of true science, are the best in every instance that could possibly be enacted, and that we do injury to our corporeal interests (not to mention those of higher moment) when we run counter to the manifest intentions of Providence. In this then, as in all other cases, let us "wonder and adore."

It is worthy of particular observation that although the bran *alone* contains too much saline matter for the use of the body, yet by taking away *all* the bran we run into the other extreme, for then too large a portion of those saline substances is subtracted from the system, and a new injury arises; those very substances being the main ingredient requisite for the growth of the bones and teeth of the human subject, and not only for their growth but for their constant repair. To the deficiency thus caused is to be attributed " the prevalence of soft or imperfectly formed bones and teeth among children whose mothers have made use of white bread while breeding or suckling them, or who have been fed after weaning with the same material. It follows, that brown bread should be given to the pregnant, to nurses, and to the young or the growing, and that it should be preferred by all, of whatever age, whose bones show a tendency to *bend*, or who have weak teeth. The passion for white bread, as respects the mass of the population, is peculiar to England: and it has been often observed, that there are more bad teeth among the English than among any other people."

This observation conveying a fact of the greatest importance I have extracted from an excellent Pamphlet, entitled "*Instructions for making Unfermented bread, by a Physician*,"* and shall have occasion to refer to this little Work again presently.

If those who are in the habit of drugging themselves with physic, would make use of the brown bread, eating it as a portion of every meal, they would cease to complain of costiveness, and find themselves gaining strength, and becoming every day more healthy and vigorous. It has been objected to this bread, however, that it irritates the bowels, and acts as a purgative. This happens with very few, for the bran is soothing to the bowels, and unlike physic, does not leave them ultimately in a torpid or inactive state. Besides, it produces natural stools, and not the copious or watery discharges which follow the administration of a purgative. In some instances, however, if the bowels are in a very disordered state, the stools may be more frequent than natural, but this will only continue for a limited time; and, under such circumstances, the bread made of the middlings or seconds flour may be employed, or the coarse kind may be eaten in conjunction with rice, tapioca, or some similarly concentrated article of diet.

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*Published by Taylor and Walton, Upper Gower Street, London. Price 3d.

Close observation has left no doubt on my mind that those who constantly use brown bread are not under a course of medicine so long as others who do not employ it; for after the stomach and bowels have been judiciously regulated by a small quantity of proper medicine, the system gets much more quickly into a healthy condition than it would if the patients' diet consisted of fine bread. I am daily seeing patients, labouring under bilious and liver diseases, complaints in the stomach, headache, &c., who for years have been under medical treatment, swallowing pills and mixtures without end, but whose complaints very soon leave them after a short course of medicine and the regular employment of this wholesome kind of food.

I might here quote numerous testimonies from the highest medical authorities in corroboration of what has been advanced, but I will content myself with the following, from Dr. Prout's able Work on Stomach and Urinary Diseases:—"Bread made with undressed flour, or even with an extra quantity of bran, is the best form in which farinaceous and excremental matters can be usually taken; not only in diabetes, but in most of the other varieties of dyspepsia, accompanied by obstinate constipation. This is a remedy, the efficacy of which has been long known and admitted; yet, strange to say, the generality of mankind choose to consult their taste rather than their reason; and, by officiously separating what nature has beneficially combined, entail upon themselves much discomfort and misery."

UNFERMENTED BREAD.

Of late years an excellent plan has been suggested and adopted of rendering bread more conducive to health by laying aside the use of yeast, and substituting in its place

Carbonate of Soda, and Muriatic Acid. This plan has been fully brought before the Public and explained by the Author of the Pamphlet mentioned in a preceding page, and I will here give a short account of it, referring the reader to the Pamphlet itself for more complete information on this highly important department of the bread question.

Alluding to Dr. Thomson's Article on Baking which appeared in the Supplement to the Encyclopædia Britannica, in 1816, the writer says ;—that it having been ascertained that the only object sought by fermenting bread with yeast was to generate Carbonic Acid for the purpose of raising the dough, it was found that this might be obtained from Carbonate of Soda, by mixing a portion of that article with the flour, and then adding a corresponding quantity of Muriatic Acid; —and further, that the dough so formed will rise immediately, fully as much if not more than dough mixed with yeast; and, when baked, will constitute a very light and excellent bread.

This process was regarded, until late years, more as a philosophical curiosity, than as available to ordinary purposes. The writer, however, was induced from circumstances which he relates in the course of the pamphlet, to try it on a proper scale for domestic use, and the results of many trials and much investigation are given in the book at length.

The following is the recipe for brown bread:—

Wheat Meal..	3 lbs. avoirdupois.
Bi-Carbonate of Soda, in powder	10 drachms apothecaries' weight.
Hydro-Chloric (Muriatic) Acid (specific gravity 1-16)..	12½ fluid drachms.
Water	about 28 fluid ounces.

First, mix the soda and the meal as thoroughly as possible. This is best done by shaking the soda from a small sieve over the meal with one hand, while they are stirred with the other, and then passing the mixture once or twice through the sieve. Next, pour the acid into the water, and diffuse it perfectly, by stirring them well with a rod of glass or wood. Then, mix intimately the meal and the water so prepared as speedily as possible, using a wooden spoon or spatula for the purpose. This quantity of dough will make two loaves rather larger than half quarterns. They must be put into a quick oven, and baked either in tins or separated from each other by a thin flat tile, as may seem best to the maker.

There are Recipes likewise for making white bread, cakes, &c., together with all the necessary directions for the proper management of each process. The requisite apparatus also are described, and the whole is rendered very plain and easy to the Housekeeper.

Bread made in this manner contains nothing but flour or meal, culinary salt, aud water. It has an agreeable natural taste, keeps much longer than common bread, is more digestible, and much less disposed to generate acid, Common bread, like every thing that has been partially fermented, ferments easily again, to the great discomfort of many stomachs, and not only so, but by acting as a *ferment*, it communicates a similar action to the food in contact with it, when the digestive power is too weak to control or counteract the operation of the chemical affinities, as "a little leaven leaveneth the whole lump." Unfermented bread, being free from this defect, is beneficial to those who suffer from headache, acidity, flatulence, eructations, a sense of sinking at the pit of the stomach. distention or pain after meals, and to all who are subject to gout or gravel. It is also useful in many affections of the skin.

There is another point which deserves notice in connexion with this subject; that is, the great national waste of human food throughout the kingdom, every year, by our present system of bread making; the total loss of wheat by fermentation and refining, is shewn by the Author of this Pamphlet to be just twenty-five per cent. Now, eighteen millions of quarters of wheat are made annually into bread in England and Wales; therefore, four millions and a half of quarters of wheat (equivalent to three thousand three hundred and fifty-seven millions of pounds weight of bread, or 8 ounces per day for every member of the community, old and young) are annually wasted. Taking the quantity thus lost to the nation as a money value (if we estimate wheat at 50s. the quarter,) it will amount to 11¼ millions of pounds sterling.

This is an awful waste of food by our present system, and calls loudly for attention at a time when our national resources are limited, and thousands of our countrymen are starving for want.

The Pamphlet contains other curious calculations and will amply repay the reader for a perusal.

HAND MILLS FOR FAMILIES.

The greatest difficulty is experienced by Housekeepers in getting bread unadulterated, and hundreds lament that they have not some means of grinding their own corn, either for meal or flour. Could they do that, all doubts as to the article they are eating would be at an end—but they are deterred by the expense from procuring a proper HAND-MILL which would enable them to enjoy this great desideratum, and thus they go on, year after year, sewing the seeds of disease, and committing, as it were, a graduated species of suicide. But the principle of *union* would overcome every obstacle even amongst the poor, and to the middle classes afford the readiest means of overcoming the evil at once. Where *Union Steam Mills* cannot be established, excellent *Portable Mills* can be procured for a few pounds, (differing in size and price) capable of grinding, in a few hours, corn sufficient for the consumption of a great many persons. Thus two individuals in tolerable circumstances, or four or five in proportion to their limited means, might unite to purchase one of these machines, and thereby render themselves independent of either fraud or loss. The public may procure these mills, made of the best materials, from *Mr. Samuel Jowett, Mill Hill, Leeds.* As general agent he supplies them cheaper than any other House, and forwards them, well packed, to every part of the kingdom.

This information may prove useful to those who may wish to adopt the plan.

FINIS.

ANDREW DEAKIN, PRINTER, EDMUND STREET, BIRMINGHAM.